

**ABSTRACT OF THE DISCLOSURE**

A semiconductor manufacturing process wherein high aspect ratio deep openings are plasma etched in a dielectric layer using an etchant gas which includes a fluorocarbon, a sulfur-containing gas, an oxygen-containing gas and an optional carrier gas. The etchant gas can include  $C_xF_yH_z$  such as  $C_4F_8$ ,  $SO_2$ ,  $O_2$  and Ar. The combination of the sulfur-containing gas and the oxygen-containing gas provides profile control of the deep openings.

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